iOPS-18

User Manual

2013 Oct V1

iBT Technologies Inc.

iOPS-18

User Manual

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Safety Information

Your iOPS-18 is designed and tested to meet the latest standards of safety for information technology equipment. However, to ensure your safety, it is important that you read the following safety instructions.

Setting up your system

Read and follow all instructions in the documentation before you operate your system.

Do not use this product near water.

Set up the system on a stable surface. Do not secure the system on any unstable plane.

Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.

Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the system for ventilation.

Never insert objects of any kind into the ventilation openings.

This system should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.

Use this product in environments with ambient temperatures between 0˚C and 40˚C.

If you use an extension cord, make sure that the total ampere rating of the devices plugged into the extension cord does not exceed its ampere rating.

DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THESTORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 80° C (176° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

Care during use

Do not walk on the power cord or allow anything to rest on it.
Do not spill water or any other liquids on your system.
When the system is turned off, a small amount of electrical current still flows. Always unplug all power, and network cables from the power outlets before cleaning the system.
If you encounter the following technical problems with the product, unplug the power cord and contact a qualified service technician or your retailer.

- The power cord or plug is damaged.
- Liquid has been spilled into the system.
- The system does not function properly even if you follow the operating instructions.
- The system was dropped or the cabinet is damaged.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

NO DISASSEMBLY

The warranty does not apply to the products that have been disassembled by users

WARNING
HAZARDOUS MOVING PARTS
KEEP FINGERS AND OTHER BODY PARTS AWAY

Acknowledgments

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CHAPTER 1 INTRODUCTION

1.1 General Description

The OPS signage player iOPS-18 is an Open Pluggable Specification (OPS) compliant signage player powered by the AMD G-Series Dual-Core APU T56N with AMD A50M Controller Hub chipset. Compliant with the Open Pluggable Specification (OPS), its slot-in module design effectively lowers deployment and field maintenance costs to simplify device installation, usage, maintenance and upgrades. Its slot-in module is connected via a JAE 80-pin connector, and includes the HDMI, DP, UART, and USB2.0 signals. The player-screen communication interface via UART and HDMI CEC provides status reporting and control, and also supports digital audio/video signals via HDMI or display port, for picture-perfect content reproduction. Also supports 1x Giga LAN, 1x COM ports, and 2x USB2.0 ports giving a great selection for data communication in display applications. The entire design makes digital signage applications more intelligent and connected.



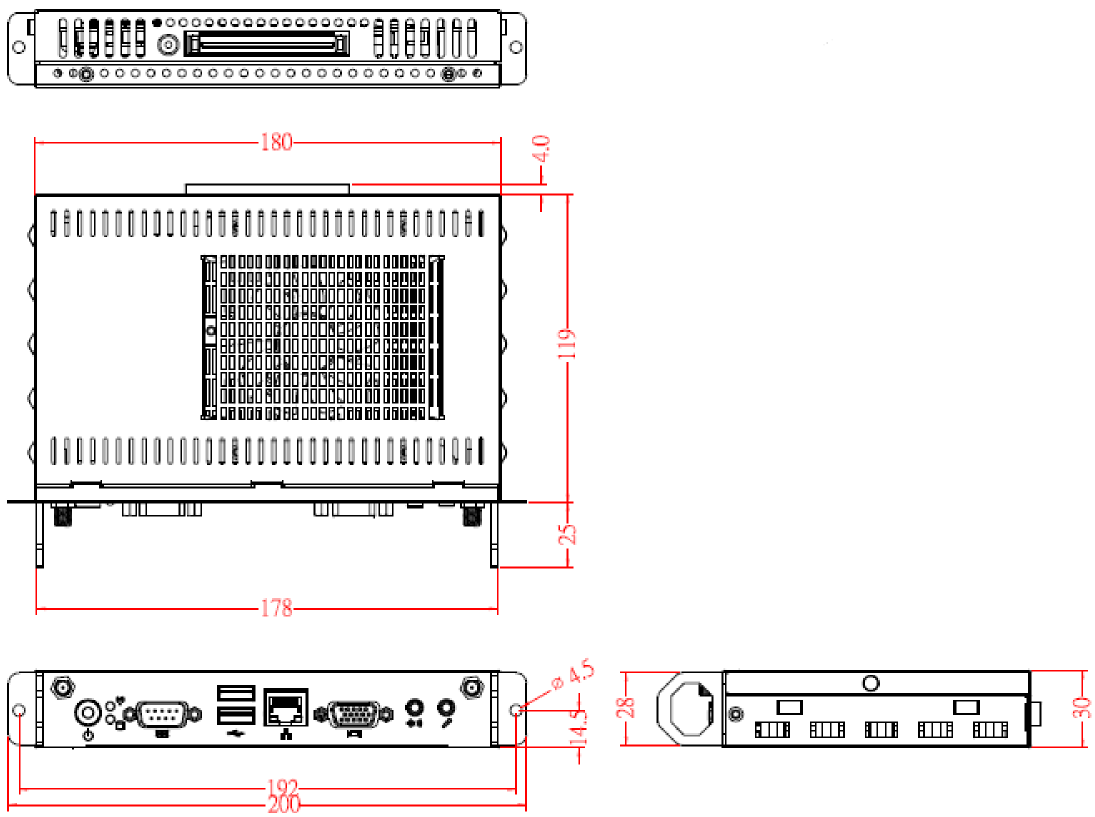
1.2 System Specification

1.2.1 Hardware Specifications

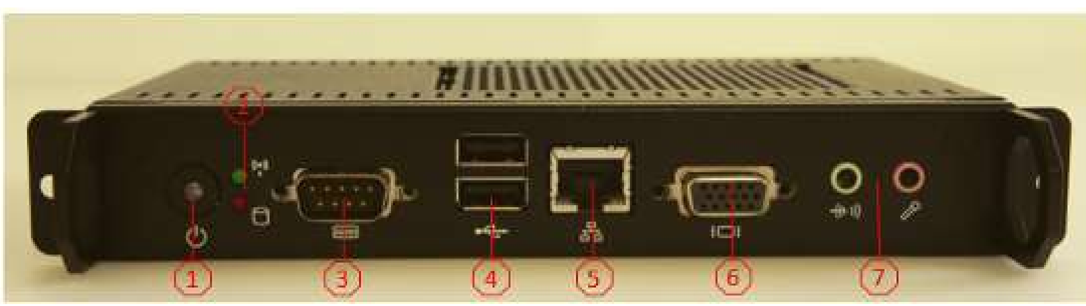
Model Name	iOPS-18
System Mainboard	iOPS-18MB
CPU	AMD G-Series Dual-Core APU (Accelerated Processing Unit):T56N=1.65GHz @ 18W TDP
Chipset	AMD A50M Controller Hub
Memory	1 x DDR3 1333MHz SO-DIMM 204PIN (Max. 4GB)
I/O Interface	1 x OPS connector (JAE TX 25, Pin definition follow Intel OPS Spec) 1 x D-Sub 1 x Gigabit LAN (RJ-45) 2 x USB2.0 compliant 1 x COM port (RS-232) 1 x Power button 1 x Line-In/Line-out
Storage	2.5" Open-frame SSD
Expansion Slots	1 x Mini PCI-E(x1) slot for Wi-Fi, Bluetooth, TV tuner options
Power Supply	N/A
Construction	Aluminum + SGCC (steel)
Chassis Color	Black
Mounting	Open Pluggable Specification
Dimensions	200mm(W) x 119mm(D) x 30mm(H) 7.87"(W) x 4.69"(D) x 1.18"(H)
Operating Temperature	0°C~ 40°C (32°F~104°F)
Storage Temperature	-20° ~ 80°C (-4°F~176°F)
Relative Humidity	5~90% @ 45°C, (non-condensing)
Vibration	SSD: 5 grms / 5~500Hz / random operation HDD: 0.25 grms / 5~500Hz / random operation
Certification	CE, FCC

° ***This specification is subject to change without prior notice.***

1.2.2 Dimensions

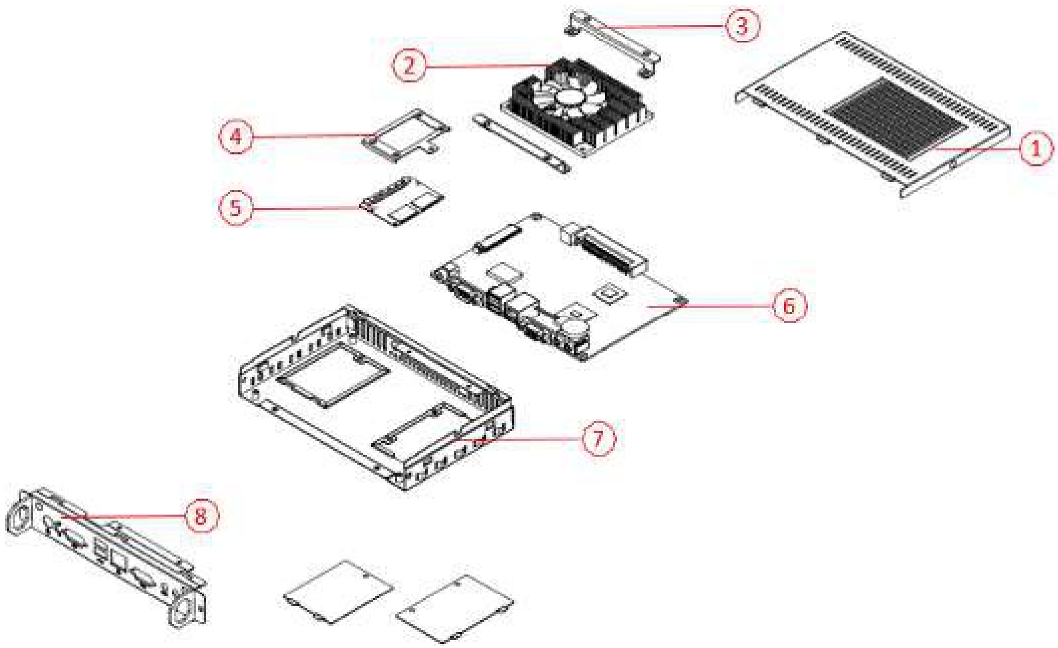


1.2.3 I/O View



Part No.	Connector	Part No.	Connector
1	Power button	5	Gigabit LAN (RJ45)
2	Power/HDD LED Indicator	6	D-Sub
3	RS-232 COM port	7	Line-in/Line-out
4	2.0 USB port		

1.3 Exploded view of the iOPS-18 assembly



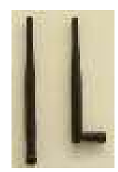
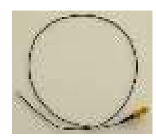
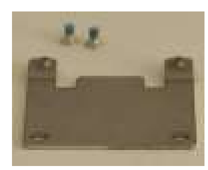
1.3.1 Parts description

Part No.	Description	Part No.	Description
1	Top cover	2	Fan
3	Fan bracket	4	SSD bracket
5	SSD	6	iOPS-18MB
7	Base	8	I/O cover

1.4 Packing List

Part NO.	Description
1	Driver CD 

1.4.1 Optional Items

Wifi solution	Description	Icon
QCOM wifi module	Wireless LAN Card; 802.11 B/G/N+BT Half Card [Q802XKN3B] RoHS (A008WIRELESS00700P)	
External Antenna	Wifi Antenna (A055RFA02C2M20800P)	
Internal cable-1/2	From Wifi module to Rear/Front panel (A055RFA0000021000P/A055RFA0000032000P)	
Bracket	MPCIE-EXT V-B1 Bracket, RoHS ;Extend Half to Full size. (SC2MPCIEEXT0B1100P)	
3G solution	**Description**	**Icon**
ZU 202	Wireless; 3.75G UMTS/HSPA [ZU202] RoHS (A008WIRELESS00520P)	
ZU 200	Wireless; 3.75G UMTS/HSPA AND GPS Module [ZU200] RoHS (A008WIRELESS00510P)	
Cable	Cable; Antenna-2 30CM P 2pcs (C501ANT0200300000P)	
Antenna	Antenna; 3G, 2pcs (A055ANT0921Q2P000P)	

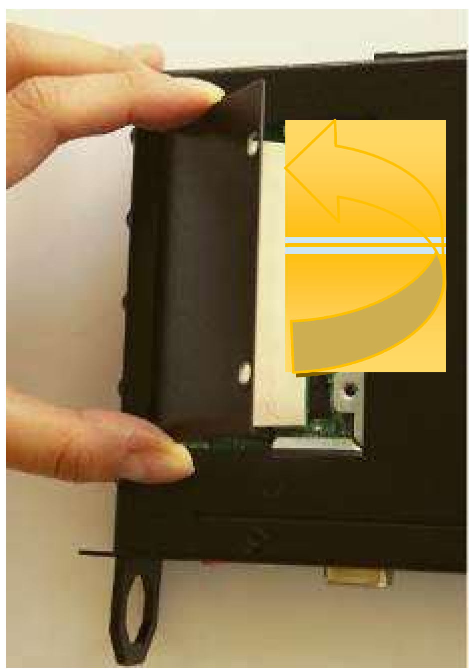
1.5 HARDWARE INSTALLATION

1.5.1 Memory Installation

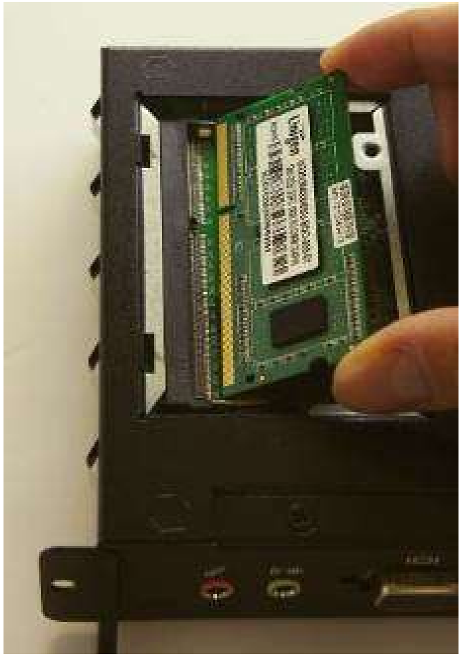
1. Remove the back cover with two screws as in the picture.



2. Once the two screws are removed, lift the cover forward to remove it.



3. With the cover removed, locate the memory slots. Insert the module into the slot. Apply firm pressure to the module until it slips into the slot. While pushing the SO-DIMM into the position, the lock will close automatically.



4. Put the thermal pad on the memory module. Return the back cover and turn the screws.



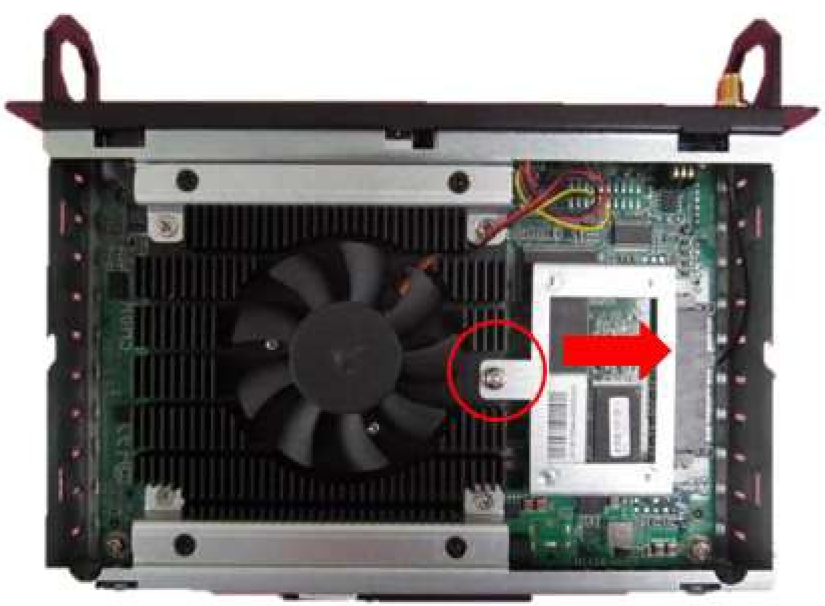


1.5.2 Storage Installation

1. Use a screwdriver to turn the two screws to its unlocked position.



2. Remove the screw as in the picture and change the storage module.



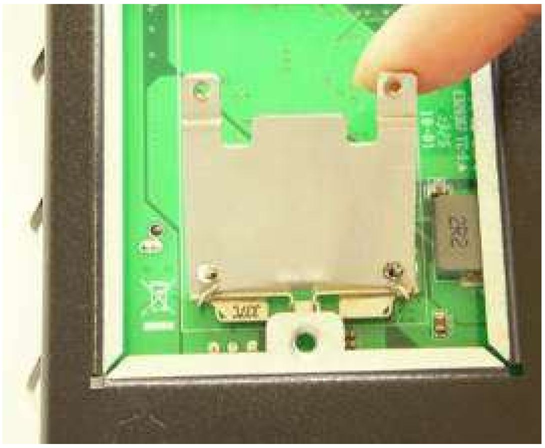
1.5.3 Wireless Installation

1. Remove the back cover with one screw as in the picture.



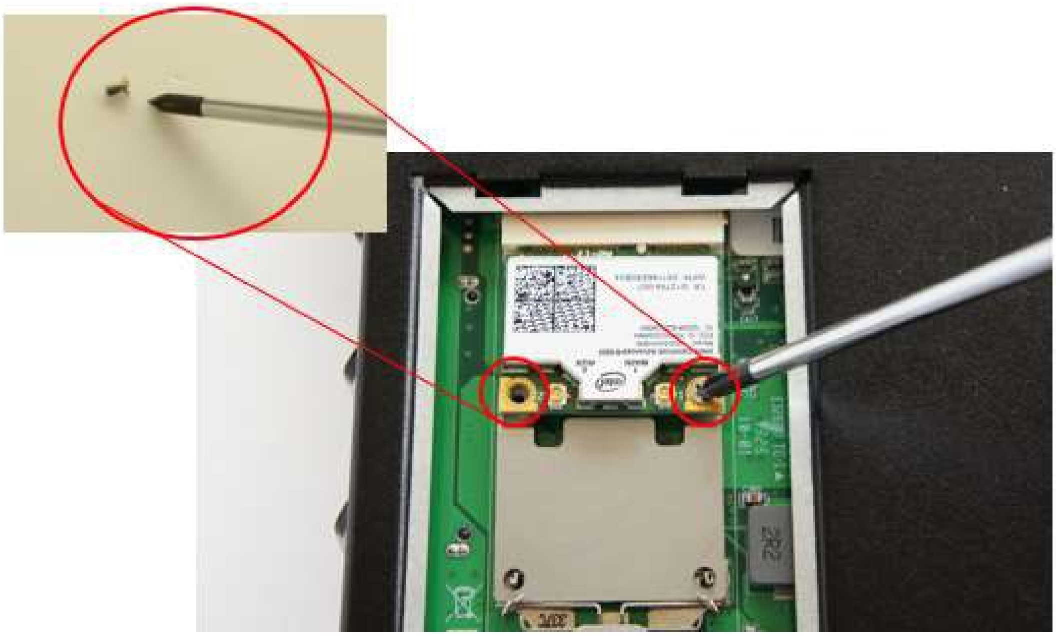


2. Insert the extending kit into the slot. Push the wifi module into the slot.





3. Use a screwdriver to turn the two screws to its unlocked position.



4. The wifi module is fixed as in the picture.



CHAPTER 2 MOTHERBOARD INTRODUCTION

2.1 Motherboard Introduction



Model Name	iOPS-18MB
CPU	AMD G-Series, T56N Dual Core 1.6 GHz
Chipset	AMD G-Series + A50M FCH
Memory	1 x DDR3 1333MHz SO-DIMM 204PIN (Max. 4GB)
Graphic Chipset	AMD Radeon HD 6310
Display	HDMI/DP: (via OPS interconnection) VGA
Storage	Support 2.5" SATA HDD/SSD
Ethernet	Realtek RTL8111E-VB-GR 10/100/1000Mbps (1 x RJ-45)
Power Supply	Input Voltage: 12-24V (via OPS interconnection)
PWR Consumption	Ave 18W, Max 30W
OS Support	Windows7, Windows XP with SP3, Windows XP Embedded, Linux
Board Dimension	165 x 115 mm

2.2 Connector

2.2.1 Power ON/OFF Button

power ON/OFF button on the front. Push this button to turn the system ON and OFF.

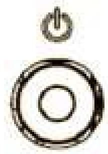


Figure 2.2 Power ON/OFF Button

2.2.2 COM Connector

one D-sub, 9-pin connector, serial communication interface port. The port supports RS-232 mode communications.

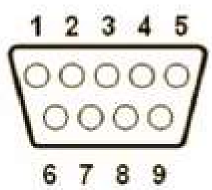


Figure 2.3 COM Connector

Table 2.1: COM Connector Pin Assignments

Pin	Signal Name
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

2.2.3 USB 1~2 Connectors

two USB interfa ce connectors, which give complete Plug & Pla y and hot swap ping capability for up to 127 external devices. The USB inte rface is compliant with USB UHCI, Rev . 2.0. The USB interface supports Plug and Play, which enables you to connect or disconnect a device without turning off the system.

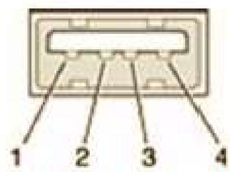


Figure 2.4 USB 1~2 Connectors

Table 2.2: USB 1~2 Connectors Pin Assignments

Pin	Signal Name
1	VCC
2	USB Data-
3	USB Data+
4	GND

2.2.4 Ethernet Connector (LAN)

one RJ-45 LAN inte rface connector, fully compliant with IEEE802.3u 10/100/1000 Base-T CSMA/CD standards. The Ethernet port provides a standard RJ-45 jack connector with LED indicators to show its Active/Link status and speed status.

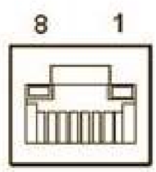


Figure 2.5 Ethernet Connector

Table 2.3: LAN Connector Pin Assignments

Pin	Signal Name
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	GND
6	GND
7	MDI2+
8	MDI2-
9	MDI3+
10	MDI3
11	VCC
12	ACT
13	+V3.3 & Link1000#
14	+V3.3 & Link100#

2.2.5 VGA Connector

one high resolution VGA interface connected by a D-sub 15-pin connector to support VGA CRT compatible monitors. It supports display resolutions of up to 2048 x 1536 @ 60 Hz.

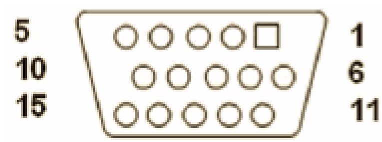


Figure 2.6 VGA Connector

Table 2.4: VGA Connector Pin Assignments	
Pin	**Signal Name**
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	DDC DAT
13	H-SYNC
14	V-SYNC
15	DDC CLK

2.2.6 Audio Connector

Line Out: Stereo speakers, earphone or front surround speakers can be connected to the line out jack.

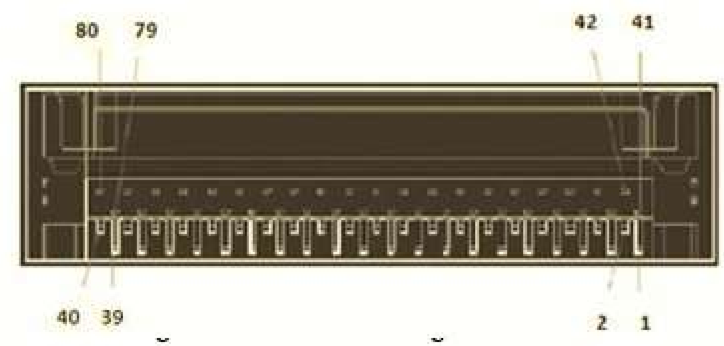
MIC In: Microphone must be connected to MIC In jack.



Figure 2.7 Line-out and MIC Connector

2.3 JAE TX-25 Plug Connector

one 80-pin right angle blindmate JAE TX-25 Plug connector; higher tolerance on mating misalignment enables plug and unplug mechanism



Pin	Signal Name	Pin	Signal Name
1	DDP_3N	41	RSVD
2	DDP_3P	42	RSVD
3	GND	43	RSVD
4	DDP_2N	44	RSVD
5	DDP_2P	45	RSVD
6	GND	46	RSVD
7	DDP_1N	47	RSVD
8	DDP_1P	48	RSVD
9	GND	49	RSVD
10	DDP_0N	50	SYS_FAN
11	DDP_0P	51	UART_RXD
12	GND	52	UART_TXD
13	DDP_AUXN	53	GND
14	DDP_AUXP	54	StdA_SSRX-
15	DDP_HPD	55	StdA_SSRX+
16	GND	56	GND

Table 2.5: JAE TX-25 Plug Connector Pin Assignments

17	TMD_CLK-	57	StdA_SSTX-
18	TMD_CLK+	58	StdA_SSTX+
19	GND	59	GND
20	TMDS0-	60	USB_PN2
21	TMDS0+	61	USB_PP2
22	GND	62	GND
23	TMDS1-	63	USB_PN1
24	TMDS1+	64	USB_PP1
25	GND	65	GND
26	TMDS2-	66	USB_PN0
27	TMDS2+	67	USB_PP0
28	GND	68	GND
29	HDMI_DDC_DATA	69	AZ_LINEOUT_L
30	HDMI_DDC_CLK	70	AZ_LINEOUT_R
31	HDMI_HPD	71	HDMI_CEC
32	GND	72	PB_
33	+12 V ~ +24 V	73	PS_ON#
34	+12 V ~ +24 V	74	PWR_STATUS
35	+12 V ~ +24 V	75	GND
36	+12 V ~ +24 V	76	GND
37	+12 V ~ +24 V	77	GND
38	+12 V ~ +24 V	78	GND
39	+12 V ~ +24 V	79	GND
40	+12 V ~ +24 V	80	GND

CHAPTER 3 BIOS SETUP

3.1 BIOS Introduction

AMIBIOS has been integrated into many motherboards for over two decades. With the AMIBIOS Setup program, you can modify BIOS settings and control various system features. This chapter describes the basic navigation of the BIOS setup screens.

AMIBIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This information is stored in battery-backed CMOS so it retains the setup information when the power is turned off.

3.2 Entering BIOS Setup

Turn on the computer and check for the patch code. If there is a number assigned to the patch code, it means that the BIOS supports your CPU
This will ensure that your CPU's system status is valid. After ensuring that you have a number assigned to patch code, press <DEL> and you will immediately be allowed to enter setup.

3.2.1 Main Setup

When you first enter the BIOS Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.

The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured; options in blue can. The right frame displays the key legend.

Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.



Figure 3.1 BIOS Main Screen

- **System Time / System Date**
  Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time must be entered in HH:MM:SS format.

3.2.2 Advanced BIOS Features Setup

Select the Advanced tab from setup screen to enter the Advanced BIOS Setup screen. You can select any of the items in the left frame of the screen, such as CPU configuration, to go to the sub menu for that item. You can display an Advanced BIOS Setup option by highlighting it using the <Arrow> keys. All Advanced BIOS Setup options are described in this section. The Advanced BIOS Setup screens are shown below. The sub menus are described on the following pages.



Figure 3.2 Advanced BIOS Features Setup Screen

3.2.2.1 PCI Subsystem Settings



Figure 3.3 PCI Subsystem Settings Screen

3.2.2.2 ACPI Settings



Figure 3.4 ACPI Settings Screen

- **Enable Hibernation**
  This item allows you to enable or disable Hibernation status
- **ACPI Sleep State**
  This item allows you to select the ACPI state used for system sleep.

- **S3 Video Repost**
  This item allows you to invoke VA BIOS POST on S3/STR resume
- **Wake-up by on-board LAN**
  Enable / Disable RI to generate a wake event.
- **Resume On RTC Alarm**
- Enable / Disable RTC to generate a wake event.

3.2.2.3 CPU Configuration

The CPU Configuration menu allows you to set the "Limit CPUID Maximum" option, PSS Support, adjust PSTATE (0 to 7), adju st PPC, enable/disable the No-execute page protection function, or enable/disable CPU virtualization (SVM).



Figure 3.5 CPU Configuration Settings Screen

3.2.2.4 IDE Configuration

In the IDE Configuration menu, you can see the currently installed Hard Drive Information in the SATA ports:



Figure 3.6 IDE Configuration Screen

3.2.2.5 Info Report Configuration

This is where you can set the p arameters have the SHB enable selected system BIOS reports.



Figure 3.7 Info Report Configuration Screen

3.2.2.6 USB Configuration



Figure 3.8 USB Configuration Screen

- **Legacy USB Support**
  Enables support for legacy USB. Auto option disables legacy support if no USB devices are connected.
- **EHCI Hand-Off**
  This is a workaround for an OS without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

3.2.2.7 Super IO Configuration

In the SuperIO Configuration menu, you can modify settings regarding the serial port.

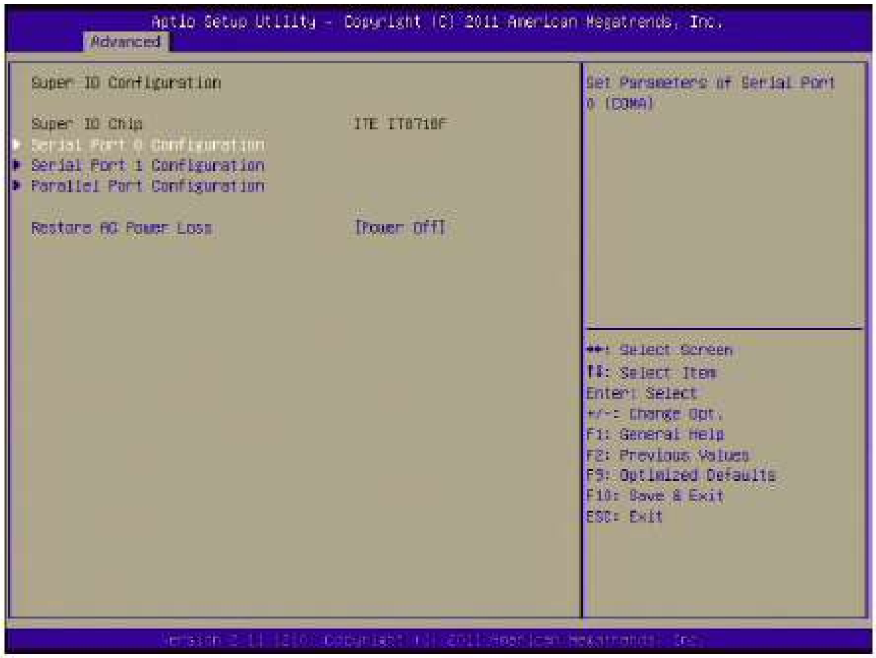


Figure 3.9 Super IO Setting Screen

3.2.2.8 H/W Monitor

This is allows you to control hardware monitoring.



Figure 3.10 PC Health Status Screen

- **Temperature**
  Shows System/CPU Temperature.

- **Fan Speed**
  Displays Fan0 speed in RPM.
- **Voltage Show**
  Vcore / +5 Vin / 3 VCC/+12 Vin / 5 VSB

3.2.3 Advanced Chipset Features Setup



Figure 3.11 Advanced Chipset Features Screen

3.2.3.1 North Bridge

In the Northbridge Configuration menu, you can find GFX and Memory Information.



Figure 3.12 North Bridge Configuration Screen



Figure 3.13 GFX Configuration Screen



Figure 3.14 Memory Configuration Screen

3.2.3.2 HDMI and DP Configuration

It allows you to select default Display as DP or HDMI.



Figure 3.15 Display Selection Screen

3.2.3.3 South Bridge



Figure 3.16 South Bridge Setup Screen

3.2.4 Boot Settings

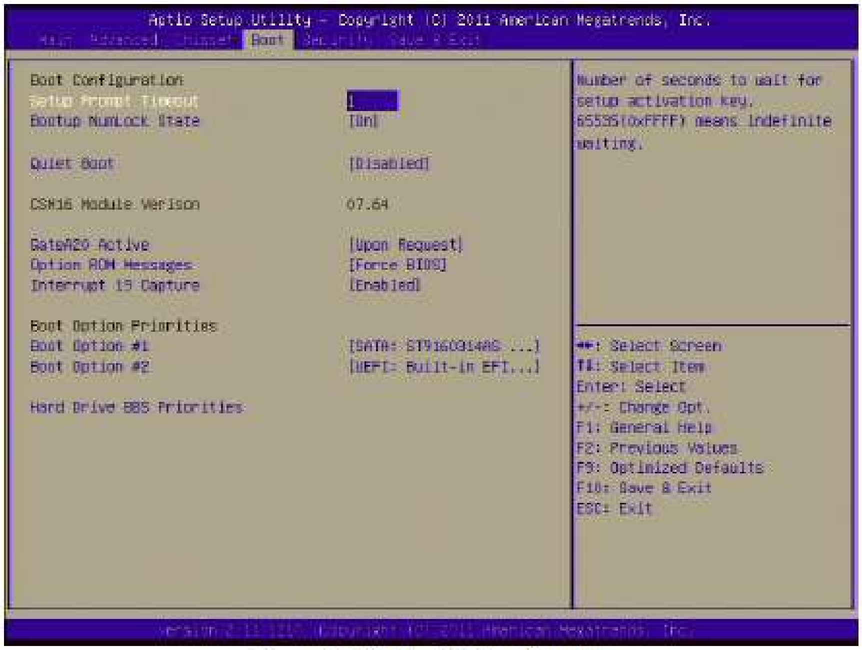


Figure 3.17 Boot Setup Screen

- **Quiet Boot**
  If this option is set to "Disabled", the BIOS displays normal POST messages. If "Enabled", an OEM Logo is shown instead of POST messages.
- **Option ROM Message**
  Set display mode for option ROM message
- **Interrupt 19 Capture**
  This item allows options for ROMs to trap interrupt 19.
- **Boots Option Priorities**
  This item specifies the boot sequence from available devices.

3.2.5 Security Setup

If Only Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.

If Only the User's password is set, then this is a power-on password and must be entered to boot or enter Setup. In Setup the user will have Administrator rights.

The password must be 3 to 20 characters long.



Figure 3.18 Security Setup Screen

3.2.6 Save & Exit



Figure 3.19 Save and Exit Screen

3.2.6.1 Save Changes and Exit

When you have completed system configuration, select this option to save your changes, exit BIOS setup and reboot the computer so the new system configuration parameters can take effect.

1. Select "Exit Saving Changes" from the Exit menu and press <Enter>.
   The following message appears:
   Save Configuration Changes and Exit Now?
   [OK][Cancel]
2. Select OK or cancel.

3.2.6.2 Discard Changes and Exit

Select this option to quit Setup without making any permanent changes to the system configuration.

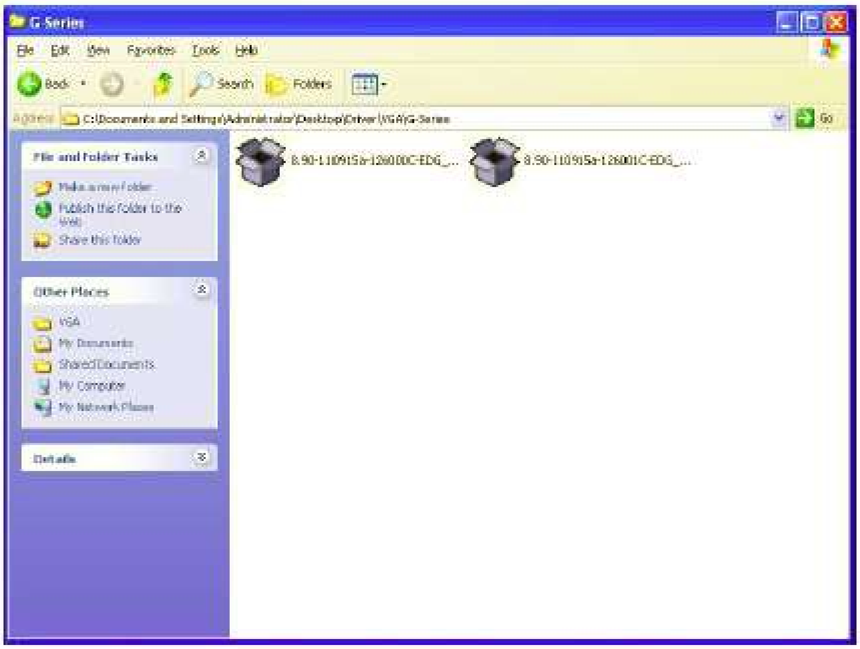
1. Select "Exit Discarding Changes" from the Exit menu and press <Enter>. The following message appears:
   Discard Changes and Exit Setup Now?
   [OK][Cancel]
2. Select OK to discard changes and exit. Discard Changes.
3. Select Discard Changes from the Exit menu and press <Enter>.

CHAPTER 4 DRIVERS INSTALLATION

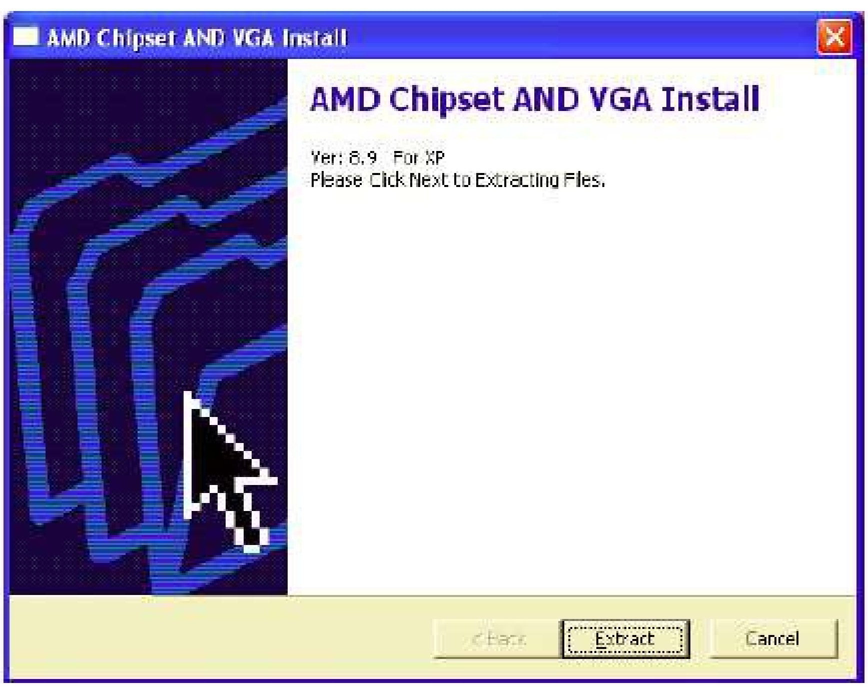
4.1 Driver Installation

4.1.1 Chipset and VGA Driver Installation

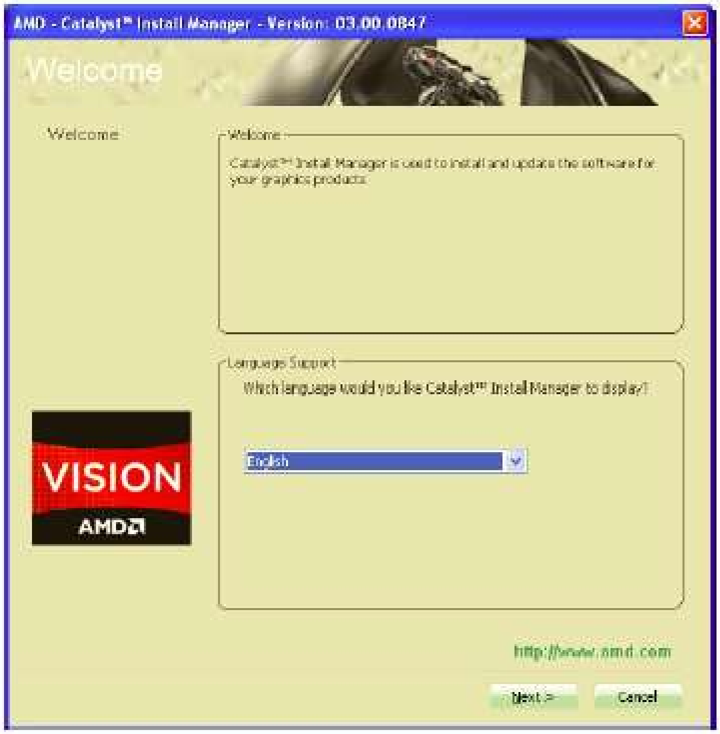
1. Change folder address. Double click to execute appropriate Setup.



2. Click "Extract".



3. Select language, and Click "Next" to go to the next step.



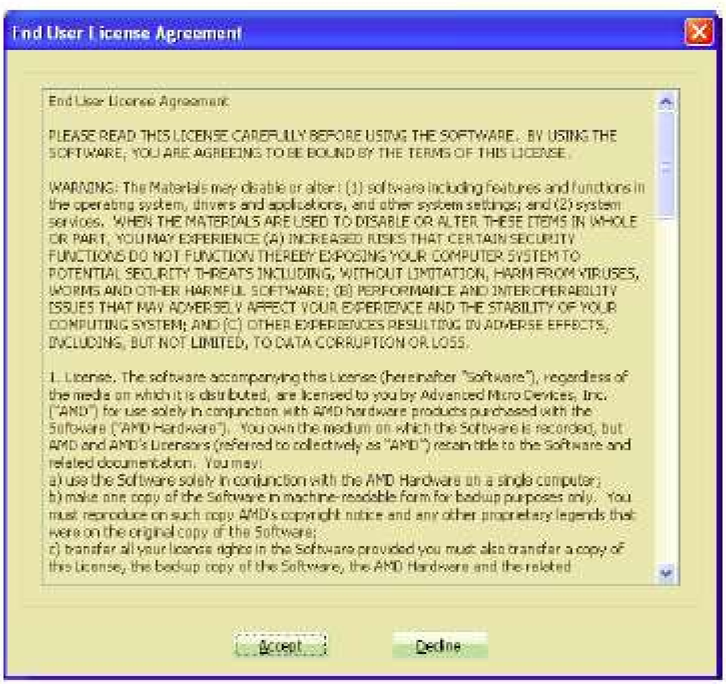
4. Click "Install" to start installation.



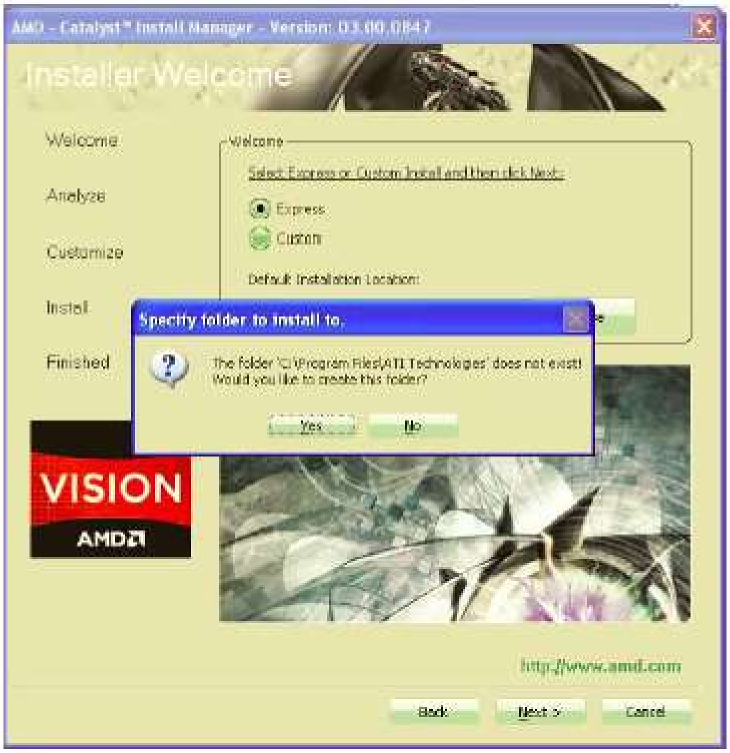
5. Select Express or Custom Install and then click "Next".



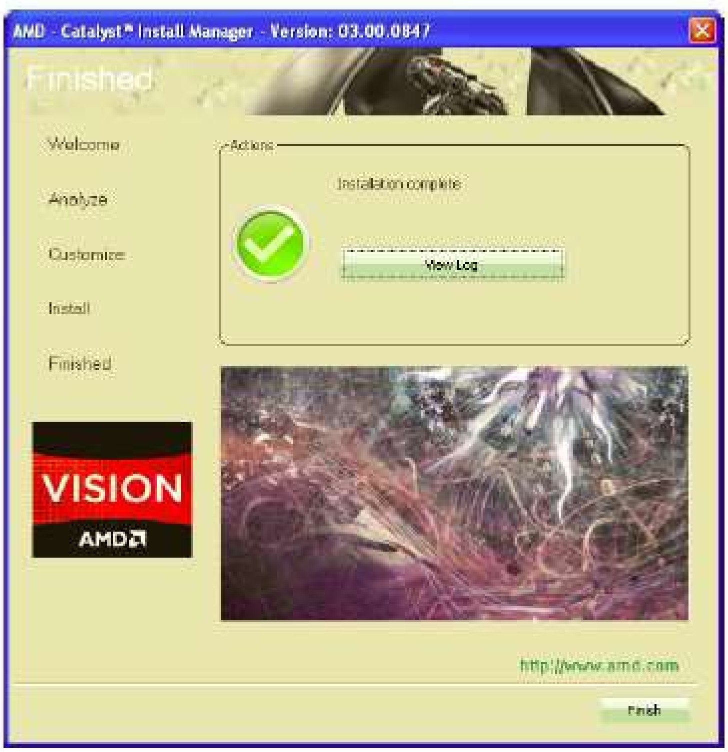
6. Click "Accept" for the user License Agreement.



7. If the folder does not yet exist, click "Yes" to create the folder.



8. Click "Finish". Then the driver installation is complete.

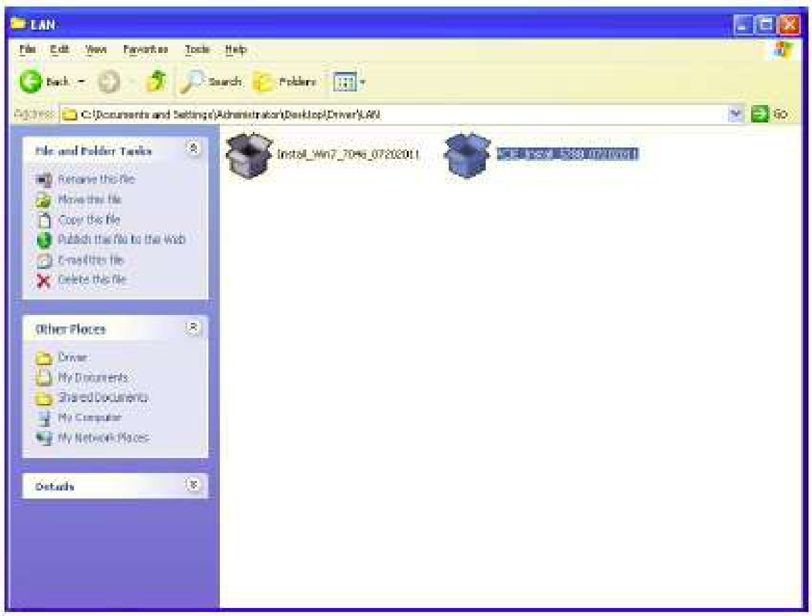


9. Select "Yes". The computer will restart automatically.

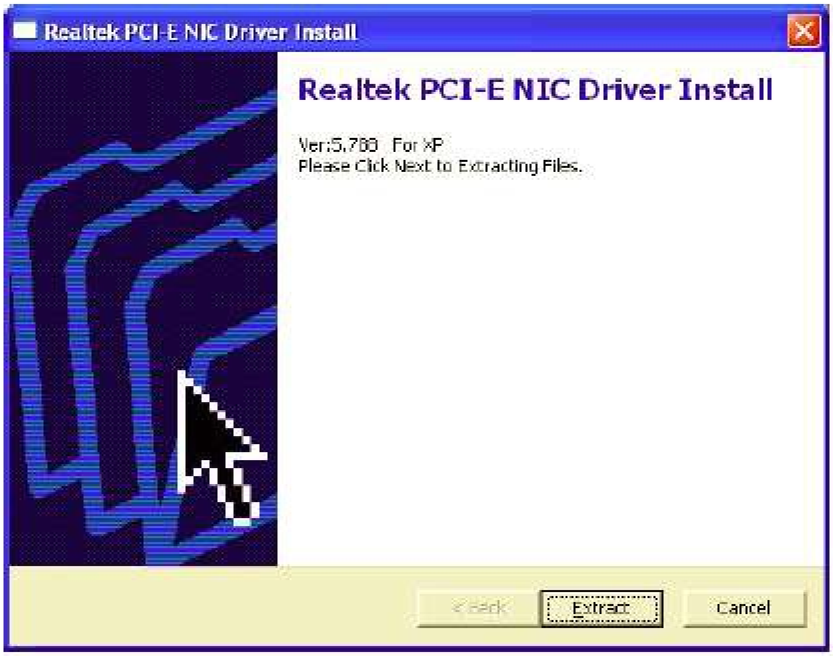


4.1.2 LAN driver installation

1. Change folder address to \Drivers\LAN. And double click to execute Setup.exe.



2. Click "Extract".



3. Click "Next" button to start Installation.



4. Click "Install" button to start Installation.

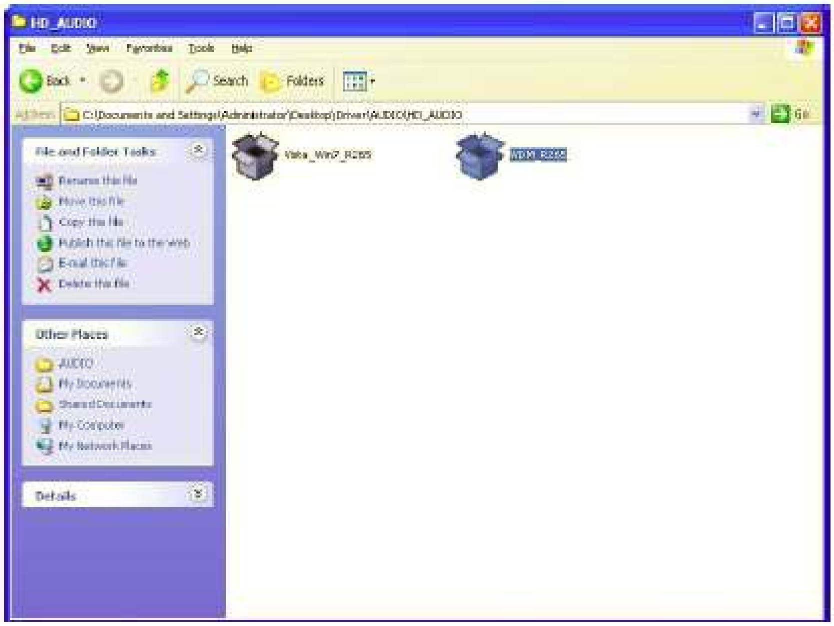


5. The network driver installation is completed. Click "Finish" button to exit InstallShield.



4.1.3 Audio driver installation

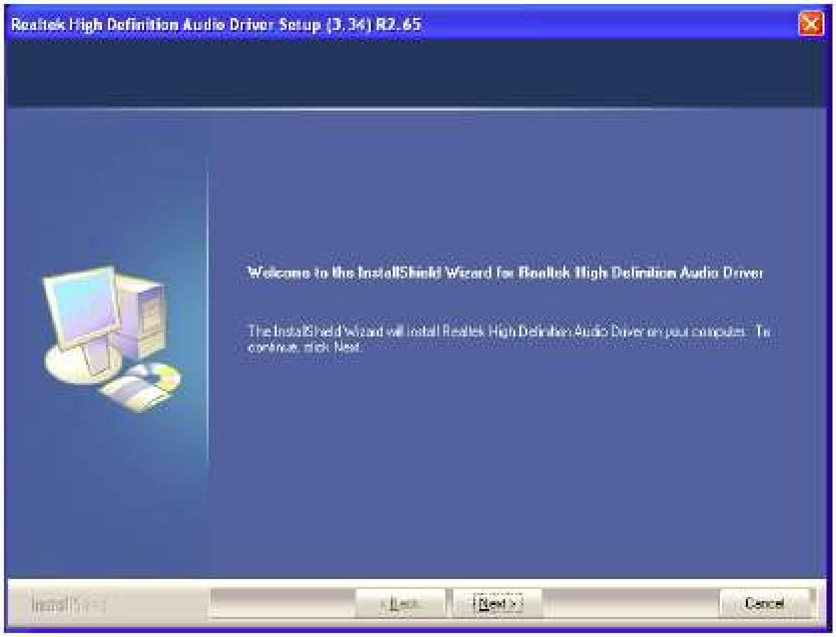
1. Change folder address to \AUDIO. And double click to execute desired Setup.exe.



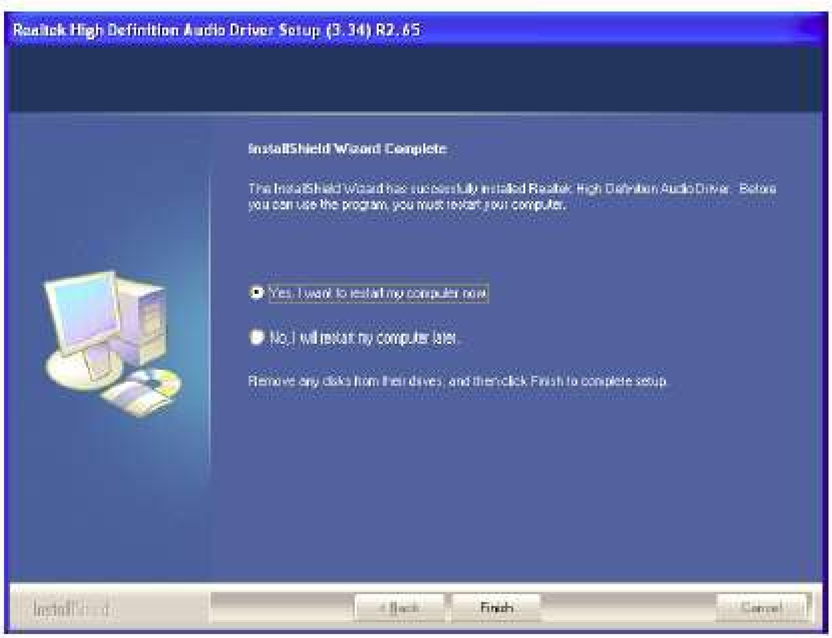
2. Click "Extract" to proceed.



3. Click "Next" to proceed.



4. Select "Yes, I want to restart this computer now." and click "Finish". The computer will restart automatically. Then the driver installation is complete.



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